DOCUMENT RESUME

ED 079 628 CG 008 029

AUTHOR Baron, Robert A.
TITLE Threatened Retaliation as an Inhibitor of Human Aggression: Mediating Effects of the Instrumental Value of Aggression.
PUB DATE 72
NOTE 22p.

EDRS PRICE MF-$0.65 HC-$3.29
DESCRIPTORS *Aggression; College Students; *Inhibition; Males; *Punishment; *Reinforcement; Research Projects; Values; Violence

ABSTRACT

Whereas threatened punishment proves effective under conditions where the instrumental value of aggressive behavior is quite low, the following techniques of control may work better in situations where the value of aggression is relatively high: (1) the use of restrained, non-aggressive models; (2) empathic arousal among aggressors; or (3) creation of emotional states incompatible with anger or overt aggression. (Author/LAA)

THREATENED RETALIATION AS AN INHIBITOR OF HUMAN AGGRESSION: MEDIATING EFFECTS OF THE INSTRUMENTAL VALUE OF AGGRESSION

Robert A. Baron[1]

Purdue University

It has frequently been contended that threatening potential aggressors with punishment for the perpetration of aggressive acts may be a highly effective means of inhibiting the occurrence of such behavior. For example, in their classic monograph on aggression, Dollard, et al. (1939, p. 39) state: "The strength of inhibition of any act of aggression varies positively with the amount of punishment anticipated to be a consequence for that act." Similarly, but in a somewhat more dramatic vein, Whiters (1966, p. 69) has suggested: "It is only the continual expectation of retaliation by the recipient or other members of society that prevents many individuals from more freely expressing aggression." These and related statements by other authors (e.g., Berkowitz, 1962, p. 73 ff.) suggest that threatened punishment, particularly in the form of possible retaliation from the victim, has been widely accepted as a potent deterrent to human violence.

In view of the apparently general acceptance of this belief, it might be assumed that it is based upon the findings of an extensive body of research. Surprisingly, however, this is far from the case. Indeed, only a small number of experiments have sought to examine the aggression-inhibiting influence of threatened punishment, and even the findings of these studies have been somewhat inconclusive. Thus, while several recent investigations have reported that threatened punishment is indeed effective in inhibiting human aggression (e.g., Baron, 1971a; Shortell, Epstein, & Taylor, 1970), other experiments have failed to substantiate the occurrence of such effects (Baron, 1974a, Knott &

Drost, 1972). The inconsistent findings of these studies, coupled with the informal observation that threatened punishment sometimes succeeds, and sometimes fails in inhibiting overt aggression in various situations outside the laboratory, suggests very strongly that the influence of this variable is mediated by several additional factors. The results of one recent experiment (Baron, 1974a) have indicated that among these factors is the degree of prior provocation experienced by potential aggressors. More specifically, it was found in this study that threatened punishment was highly effective in inhibiting subsequent aggression by individuals who had not previously been angered by the victim, but relatively ineffective in preventing such behavior by subjects who had previously suffered strong provocation at the hands of this person. The present experiment was designed to investigate the influence of an additional factor which may play a similar mediating role with respect to the effectiveness of threatened punishment in inhibiting subsequent aggression, that of the instrumental value of such behavior.

As noted recently by Buss (1971), aggression often serves as an instrumental response, providing its perpetrators with many important forms of reward (e.g., money, status, prestige). It is suggested here that to the extent this is the case (i.e., to the extent aggression possesses such instrumental value), threatened punishment will be ineffective in preventing or inhibiting the occurrence of such behavior. More specifically, it is proposed that other factors being equal, threatened punishment will be highly effective in inhibiting subsequent aggression under conditions where the instrumental value of such behavior is low, but relatively ineffective in this regard under conditions where its instrumental value is high.

In order to investigate this suggestion in a systematic manner, subjects in one group (the high instrumental value condition) were provided with

information which suggested that they could obtain an important goal by aggressing against the victim, while those in a second group (the low instrumental value condition) were not supplied with such information. The goal which could ostensibly be obtained through aggression in the high instrumental value group was that of "looking good" in the experiment (i.e., making a favorable impression upon the experimenter), one which has been shown to be extremely important to subjects participating in psychological research (Sigall, Aronson, & Van Hoose, 1970). More specifically, subjects in this condition were provided with information suggesting that they could "look good" in the experiment by directing strong attacks against the victim, while those in the low instrumental value group were not supplied with information of this type. Threatened punishment, in the form of possible retaliation from the victim, was then varied in a systematic manner by informing one third of the individuals in each of these groups that the victim would never have an opportunity to shock them, a second third that he might have such an opportunity, and a final third that he would definitely obtain such an opportunity (Baron, 1971a). On the basis of the suggestions offered above, it was predicted that threatened retaliation from the victim would be highly effective in inhibiting subsequent aggression by subjects in the low instrumental value condition, but would be generally ineffective in restraining such behavior by subjects in the high instrumental value group.

Method

Subjects

Seventy-eight undergraduate males enrolled in sections of Elementary Psychology at Purdue University participated in the experiment. However, the data for eight individuals were eliminated because they expressed suspicion

concerning major manipulations, or guessed the true purpose of the study. Subjects took part in the experiment in order to satisfy a course requirement.

Design

A 3 X 2 factorial design based upon three levels of apparent probability of retaliation from the victim (low, moderate, high), and two levels of instrumental value of aggression (low, high) was employed. Ten subjects were randomly assigned to each cell of this design.

Apparatus

The apparatus consisted of a modified Buss "aggression machine" (Buss, 1961) identical to that employed in a number of previous investigations (e.g., Baron, 1971a; 1974a). This device contained ten push-button switches which could ostensibly be employed by subjects to deliver electric shocks of varying intensity to another individual.

Procedure

When subjects arrived for the experiment, they found a confederate already present in the waiting room. Shortly thereafter, the experimenter arrived and conducted both individuals to the experimental room where she explained that the study was concerned with the effects of punishment, in the form of electric shock, on physiological reactions. She further indicated that in order to study this problem, one of the two individuals present would serve as a responder, and receive a series of electric shocks of varying intensity from the remaining individual, who would play the role of stimulater. The responder's physiological reactions would then be monitored continuously during the study, in order to determine the precise manner in which they were affected by the shocks he received. The present procedures were employed instead of

the usual "teacher-learner" paradigm because recent evidence (Baron & Eggleston, 1972) suggests that they provide a measure of aggression less contaminated by various altruistic motives (e.g., a desire to help the "learner" master the experimental materials) than the more commonly used technique.

The experimenter then asked the confederate if he would agree to serve as the responder. He consented to this request, and was then conducted to a second room where the experimenter presented instructions for his task in the study, and pretended to attach shock and physiological recording electrodes to his wrists and arms. The recording electrodes were connected to an impressive-looking polygraph (Lafayette Model 176014 E), which was kept in full view of subjects and switched on quite ostentatiously at this time. In reality, of course, no records of the confederate's physiological processes were made during the study, and this equipment was employed for the sole purpose of lending credence to the experimenter's earlier statement that the major purpose of the study was that of examining the effects of punishment upon such reactions.

After completing these activities, the experimenter returned to the room where the subject was waiting, and provided detailed instructions for his role as stimulater. These instructions indicated that each time a red signal light on the apparatus was illuminated, he should select and depress one of the ten buttons on the equipment in order to deliver electric shock to the responder. She further explained that this light would be illuminated according to a fixed, random schedule specifically designed to prevent the responder from "getting ready" for each shock, and so influencing his physiological reactions to these stimuli. She also indicated that as an additional

means of preventing such "readiness," and to further distract the responder's attention away from the shocks, he would attempt to memorize a list of nonsense syllable pairs which would be read to him by the stimulater (i.e., the subject). It was clearly emphasized, however, that the illumination of the red light would have nothing to do with the responder's performance on this task, but would occur only on those occasions dictated by the prearranged, random schedule. The learning task was included in the procedures of the present study in order to insure that subjects performed the same general activities (i.e., presenting various materials to the victim before shocking him) as those carried out in previous investigations employing the "teacher-learner" paradigm.

The experimenter then went on to indicate that because any shocks employed by the stimulater would be perfectly adequate in terms of fulfilling the requirements of the study, he was to feel free to choose any of the shock buttons he wished and to depress these buttons for as long a period as he desired each time the red "shock" signal was illuminated. It was further explained that the higher the number of the button chosen, the stronger the shock to the responder, and the longer any button was depressed, the longer would the shock to this individual last. In order to demonstrate the magnitude of the shocks which could be delivered to the responder, the experimenter then administered "samples" from buttons 4 and 5. These shocks were generated by two "D" cell batteries and an inductorium contained within the apparatus, and were delivered by stainless steel electrodes attached to the second and fifth fingers of one of the subject's hands. The shock produced by button 5 was stronger than that provided by button 4, but both were generally judged to be moderately unpleasant by subjects.

At this point in the procedures, the experimenter introduced instructions designed to vary the instrumental value of aggression. In the high instrumental

value condition she noted that previous research had revealed the existence of a close relationship between the strength of subjects' tendencies to employ high-magnitude shocks, and their level of masculinity and general maturity, while in the low instrumental value condition she omitted any mention of such a relationship. Thus, subjects in the high instrumental value group were lead to believe that they could enhance their self-image and "look good" in the experiment (i.e., appear to be highly masculine and mature) by aggressing against the victim, while those in the low instrumental value group were not provided with such an impression. In order to counteract the possibility that subjects in the high instrumental value group would direct stronger shocks against the victim than those in the low instrumental value group simply because they felt that this was what the experimenter wanted or expected them to do (i.e., because of demand characteristics operating in this direction), both groups were informed that they should feel perfectly free to use any shocks they wished, in any order or pattern they desired, because: (1) there was no "correct" or "preferred" pattern of shocks; (2) it was expected that different stimulaters would tend to choose unique patterns and this would, in fact, increase the generality of the results, and (3) so many individuals would be participating in the study that the behavior of any particular stimulater would have no appreciable impact upon the major results. These instructions were formulated on the basis of a pilot investigation (N=20) which indicated that in the presence of such information, subjects felt that any pattern of shocks they employed would be perfectly acceptable from the standpoint of the major purposes of the study, and that they were quite free to shock the victim in any manner they wished.

Following these instructions, the experimenter went on to provide additional information designed to vary the apparent probability that subjects would ever

be exposed to retaliation from the responder. In the low probability of retaliation group she indicated that the experiment would be over when the subject finished serving as the stimulater. Thus, it appeared that the responder would have no opportunity to engage in retaliation in this condition. In the moderate probability of retaliation group she indicated that if enough time remained after the subject finished serving as the stimulater, he would be asked to change places with the confederate and play the role of responder. Thus, it appeared that the responder might have an opportunity to engage in retaliation in this group. Finally, in the high probability of retaliation condition, the experimenter indicated that when the subject had finished serving as stimulater, he would definitely change places with the confederate and play the role of responder. As a result, it appeared certain that the responder would have an opportunity to retaliate in this group. In reality, subjects never changed places with the responder after completing their turn as stimulater. The experimenter explained the absence of such a reversal of roles by indicating that there was not enough time remaining in the experimental hour for the institution of such procedures.

The red signal light was illuminated a total of twenty times during the aggression phase of the experiment, thus providing subjects with this number of opportunities to shock the responder.

Postexperimental questionnaire and interview. Following the last shock trial, subjects completed a brief postexperimental questionnaire on which they rated, on seven point scales, the likelihood that they would ever change places with the responder, the importance of delivering at least some strong shocks to this individual, and their freedom to employ any pattern of shocks they wished. Following the completion of this questionnaire, subjects participated in a

brief postexperimental interview during which the experimenter attempted to ascertain whether (1) they were suspicious concerning the experimental manipulations or had guessed the true purpose of the study, and (2) whether they had in fact felt free to shock the responder in any manner they desired.

Results

Figure 1 presents the mean intensity of the shocks delivered to the confederate by subjects in each of the six experimental groups. Inspection of this figure suggests that the level of shocks directed against this

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Figure 1 about here

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person by subjects was influenced both by the instrumental value of aggression, and the apparent probability of retaliation. More specifically, except in the case of the moderate probability condition, subjects in the high instrumental value group delivered stronger shocks to the victim than subjects in the low instrumental value group. Moreover, the strength of these shocks tended to decrease as the apparent probability of retaliation rose. In addition, and of somewhat greater interest within the context of the present research, these two independent variables appeared to interact in the predicted manner, so that increasing levels of apparent probability of retaliation were more effective in reducing the strength of the shocks employed by subjects in the low than high instrumental value group.

An analysis of variance performed upon the data represented in Figure 1 yielded significant main effects for instrumental value of aggression ($F=7.78$, $df=1/54$, $p<.01$), and apparent probability of retaliation ($F=4.09$, $df=2/54$, $p<.025$). Thus, as suggested by Figure 1, subjects in the high instrumental value condition delivered significantly stronger shocks to the

responder than subjects in the low instrumental value condition, and the level of shocks directed against this person tended to decrease as the apparent probability of retaliation rose. In addition, the interaction between instrumental value of aggression and apparent probability of retaliation closely approached conventional levels of statistical significance ($F=2.99$, $df=2/54$, $p=.056$). In order to examine this apparent interaction more closely, follow-up simple effects analyses were performed at each of the two levels of instrumental value. The results of these analyses indicated that as suggested by Figure 1, increments in the apparent probability of retaliation produced a significant reduction in the level of shocks employed by subjects in the low instrumental value group ($p<.025$), but failed to induce a similar drop in the intensity of shocks employed by individuals in the high instrumental value condition. Consistent with experimental predictions, then, threatened retaliation from the victim was more effective in inhibiting subsequent aggression under conditions where the instrumental value of such behavior was relatively low than under conditions where it appeared to be relatively high.

In order to further examine the effects of threatened retaliation from the victim upon subsequent aggression, the means of the low, moderate, and high probability of retaliation groups were compared at each of the two levels of instrumental value by Duncan multiple range test. In the case of the low instrumental value condition, it was found that the mean of the high probability group was significantly smaller than those of both the low and moderate probability groups ($p<.05$). Thus, it appeared that under conditions where the instrumental value of aggression was low, such behavior could be effectively inhibited by a high apparent probability of retaliation from the

victim. Turning to the high instrumental value condition, however, it was found that the means of the high probability group did not differ significantly from those of either the low or moderate probability groups. Thus, it appeared that under these conditions, even a high apparent probability of retaliation was unsuccessful in inhibiting subsequent aggression.

Postexperimental Questionnaire and Interview

The first item on the postexperimental questionnaire required subjects to rate the likelihood that they would ever change places with the victim. An analysis of variance performed on the data for this question indicated that the main effect of apparent probability of retaliation was highly significant ($F=8.35$, $df=2/54$, $p<.001$). The means for the low, moderate, and high probability groups were 3.65, 5.00, and 5.95, respectively, and follow-up comparisons between these means by Duncan multiple range test indicated that the differences between all pairs were significant ($p<.05$). Thus, there was some evidence that the attempted manipulation of this factor was successful.

The second and third items on the questionnaire required subjects to rate the importance of administering at least some strong shocks to the victim, and their freedom to employ any pattern of shocks they wished. Both questions were included in order to examine the possibility that subjects in the high instrumental value condition would feel under greater constraint than subjects in the low instrumental value condition to direct strong attacks against the victim. However, separate analyses of variance performed on the data for both items yielded no significant effects. Thus, there was no evidence that the instructions employed to manipulate the instrumental value of aggression served to induce differential feelings among

subjects in the various groups that they were "required" or "expected" to direct strong shocks against the confederate.

These findings were supported by more informal evidence gathered during the postexperimental interview sessions. These sessions were conducted only after the experimenter had explained that subjects would receive full credit for their participation, regardless of their answers, and after she had in fact signed their experiment cards. Moreover, every attempt was made to induce candor and honesty on the part of subjects (e.g., the experimenter carefully explained how important the information they supplied would be in the planning of further research). Yet, even under these conditions, very few individuals in either the high or low instrumental value groups indicated that they had felt constrained or "required" to employ any particular pattern of shocks. Rather, the overwhelming majority (fully 57 out of 60) reported that they had believed that virtually any shocks they employed would be acceptable from the standpoint of fulfilling the major objectives of the study, and that they were, therefore, completely free to shock the responder in any manner they wished. When this informal evidence is combined with the findings for the postexperimental questionnaire items described above, there appear to be strong grounds for rejecting a "demand characteristics" interpretation of the major findings of the present investigation.

Discussion

The results of this experiment suggest that the effectiveness of threatened punishment in inhibiting human aggression is strongly determined by the instrumental value of such behavior. More specifically, it was found that threatened retaliation from the victim was highly successful in inhibiting subsequent aggression on the part of subjects in the low instrumental value group, but relatively ineffective in preventing such behavior by subjects

in the high instrumental value condition. Thus, it appears that threatened punishment may serve as an effective deterrent to human aggression only under conditions where potential aggressors have relatively little to gain in the way of extrinsic rewards from the performance of such actions.

That the aggression-inhibiting impact of threatened retaliation may be substantially diminished by raising the instrumental value of such behavior is not in itself very surprising. After all, informal observation suggests very clearly that aggressors will often persist in their attacks against others, even in the face of severe threats of punishment, under conditions where the attainment of important rewards is made contingent upon such actions (see, e.g., Buss, 1966, 1971). What is surprising, however, is the fact that the influence of threatened punishment could be markedly diminished in the present study by procedures which presumably induced only a modest increment in the instrumental value of aggression. This finding seems to suggest that threatened punishment may be much less effective as a technique for preventing human violence than has previously been suggested (e.g., Walters, 1966), serving to substantially inhibit such behavior only under conditions where its instrumental value is quite low.

Of course, it might be argued that the influence of threatened retaliation was so readily overcome in the present investigation only because the magnitude of punishment anticipated by subjects was quite low, and that the threat of somewhat stronger forms of retaliation from the victim would have been effective in inhibiting aggression even on the part of subjects in the high instrumental value group. Unfortunately, this argument is considerably weakened by the fact that subjects found the sample shocks delivered by buttons 4 and 5 on the experimental apparatus to be moderately unpleasant,

and that by extrapolation, the shocks delivered by the higher numbered buttons would be extremely painful indeed. Apparently then, they perceived the victim as being capable of relatively severe retaliation against them. However, the possibility remains that threatened punishment would be more effective in inhibiting subsequent aggression under conditions where it is of somewhat greater magnitude than was the case in the present study, and should be examined in future investigations where the apparent strength, as well as the apparent probability of such punishment, is varied in a systematic manner.

Although the major findings of the present experiment seem to be relatively clear and straightforward, they might be called into question on the grounds that the manipulation of the instrumental value of aggression was not appropriate. More specifically, it might be suggested that the procedures employed to raise the instrumental value of such behavior failed to accomplish this purpose, and instead, succeeded in raising the level of subjects' attacks against the victim simply by increasing the strength of the demand characteristics operating in this direction. If this were actually the case, the findings of the present research would indeed be quite ambiguous. Fortunately, however, there appear to be grounds for rejecting such an interpretation.

First, as noted above, great pains were taken throughout the study to eliminate, or at least counteract, the influence of such demand characteristics. More specifically, subjects were informed on several different occasions that they should feel absolutely free to employ any level or pattern of shocks they wished because: (1) there was no "correct" or "preferred" pattern for these noxious stimuli; (2) it was expected that different stimulaters would tend to choose unique patterns anyway; and (3) so many individuals would

eventually participate in the study that the behavior of any particular stimulater would have no important influence upon the major findings. In short, a concerted effort was made to eliminate any feelings on the part of subjects that they were "required" or "expected" to behave in any particular manner during the experiment.

Second, as noted above, two items on the postexperimental questionnaire specifically designed to assess the presence of such demand characteristics indicated that subjects actually felt relatively little constraint or pressure to deliver strong shocks to the victim. Moreover, and of greater importance within the context of the present study, subjects in the high instrumental value group did not report feeling any less freedom in this respect than those in the low instrumental value group. Clearly, then, there was some suggestive evidence that attempts to reduce or eliminate the influence of any demand characteristics associated with the manipulation of the instrumental value of aggression factor were successful, and that differences in the behavior of subjects in the various experimental groups cannot reasonably be attributed to such effects in a simple and straightforward manner.

Finally, more informal evidence gathered during the postexperimental interviews suggested that in general, subjects seemed to believe that they were indeed completely free to employ any pattern of shocks they desired during the experiment. More specifically, the overwhelming majority (fully 57 out of 60) reported that the experimenter actually expected different individuals to employ different levels of shock, and that virtually any pattern they chose would be completely acceptable in terms of accomplishing the major objectives of the study. When it is recalled that these interviews were conducted after subjects had been assured that they would receive full credit for their participation in the study, and after they had been informed

that truthful answers on their part were exceedingly crucial in the planning of future research, these findings seem to provide additional, convincing support for the contention that the contrasting patterns of behavior shown by subjects in the high and low instrumental value groups are not simply attributable to demand characteristics of the experimental situation.

If, as argued above, the instrumental value of aggression was manipulated effectively, then the findings of the present study appear to have important implications for the prevention and control of human aggression. Specifically, they seem to suggest that threatened punishment, in the form of possible retaliation from the victim, will prove to be effective in inhibiting subsequent aggression only under conditions where the instrumental value of such behavior is quite low. Thus, in situations where the instrumental value of aggression is relatively high, other techniques for the control of this type of behavior, such as: (1) the introduction of restrained, non-aggressive models (e.g., Baron, 1971b); (2) the induction of empathic arousal among aggressors (e.g., Baron, 1971c; Geen, 1970); or (3) the elicitation of responses or emotional states incompatible with anger or overt aggression (e.g., Baron, 1974b), may be employed with greater success.

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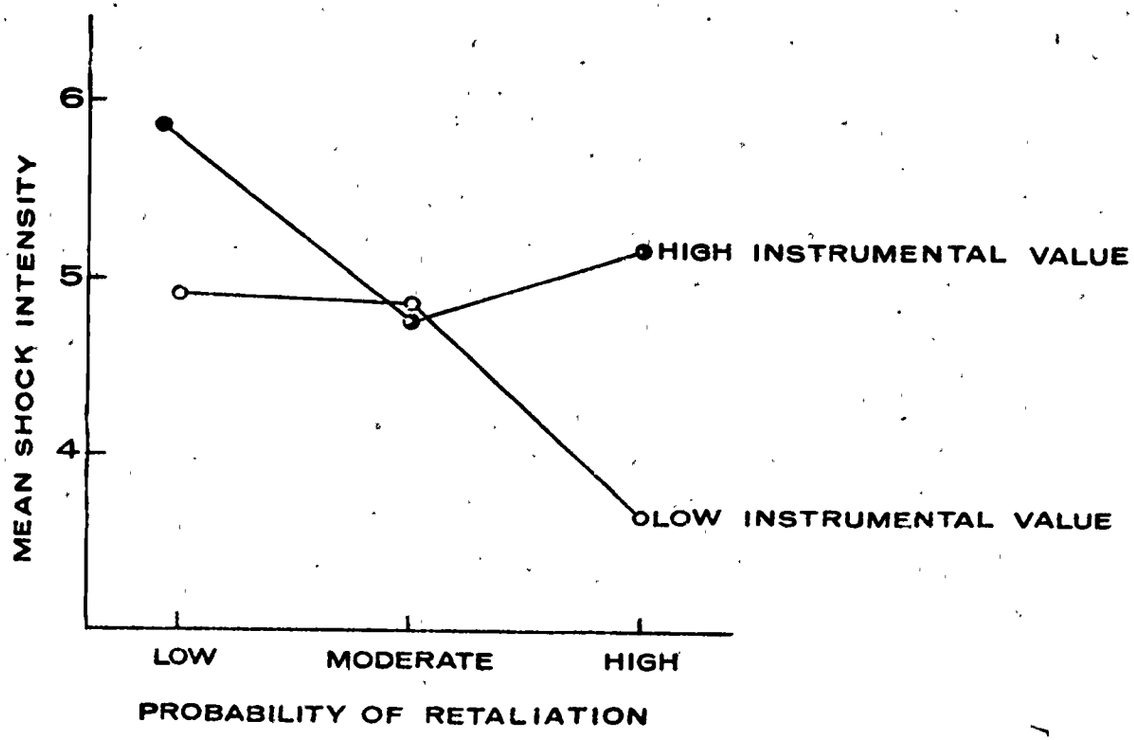
Footnote

[1]The author wishes to express his sincere appreciation to Jack Gay, Sharon Jackson, Patti Rostkowski, and Dennis McGuire for their able assistance in the collection of the data, and to Paul Bell for his aid in the statistical analyses. Requests for reprints should be sent to the author at the Department of Psychological Sciences, Purdue University, West Lafayette, Indiana 47907.

Figure Caption

Fig. 1. Mean shock intensity as a function of apparent probability of retaliation and instrumental value of aggression.


MEAN SHOCK INTENSITY
6
5
4
HIGH INSTRUMENTAL VALUE
LOW INSTRUMENTAL VALUE
LOW
MODERATE
HIGH
PROBABILITY OF RETALIATION